

**What is claimed is:**

1. An extensible type universal remote control comprising:
  - a basic unit, said basic unit comprising:
    - 5 a key input section comprising common input selection buttons commonly used for controlling multiple pieces of electronic equipment;
    - a remote-control signal transmitting section for transmitting a relevant equipment key code to a relevant piece of electronic equipment, said relevant key code generated according to a selected value of one of said common input selection buttons or a selected
    - 10 value of a specific input selection button arranged outside of said basic unit; and
    - an extension connection terminal portion comprising a data line for receiving the relevant key code when generated by said specific input selection button arranged outside of said basic unit.
- 15 2. The extensible type universal remote control as claimed in claim 1, further comprising:
  - an additional unit, said additional unit comprising:
    - a key input section comprising the specific input selection button, which is exclusively used for controlling specific pieces of electronic equipment; and
    - 20 an extension connection terminal portion detachably connected to the extension connection terminal portion of the basic unit and comprising data lines for transmitting the relevant key code, generated according to the selected value of the specific input selection buttons of the additional unit, to the basic unit.
- 25 3. The extensible type universal remote control as claimed in claim 2, wherein each of the extension connection terminal portions of the basic and additional units comprises a data connector formed with the data lines and a power connector formed with power lines.
4. The extensible type universal remote control as claimed in claim 1, wherein the
- 30 specific input selection button is provided on an additional unit, and the basic unit further

comprises:

a memory section in which information on the relevant equipment key codes of the input selection buttons of the basic and additional units is stored;

5 a remote-control control section for extracting the relevant equipment key code from the memory section according to the selected value of the input selection button selected from the key input section of the basic unit and transmitting the extracted key code to the remote-control signal transmitting section;

a comparison/determination section for comparing the relevant equipment key codes stored in the memory section with the key code input from the additional unit and  
10 determining the relevant equipment key code; and

a mode setting section for automatically changing an equipment mode of the basic unit to an equipment mode corresponding to the additional unit in accordance with the determination result of the comparison/determination section.

15 5. The extensible type universal remote control as claimed in claim 4, wherein:  
the additional unit further comprises an extension connection terminal portion detachably connectable to the extension connection terminal portion of the basic unit; and  
when a user connects the extension connection terminal portions of the basic and additional units to each other and selects the specific input selection button of the  
20 additional unit, specific key code information corresponding to the selected specific button is compared with the information on the relevant equipment key codes stored in the memory section of the basic unit, and the equipment mode of the basic unit is automatically changed to the equipment mode corresponding to the specific key code in accordance with the determination result.

25 6. The extensible type universal remote control as claimed in claim 4, wherein  
the additional unit further comprises an extension connection terminal portion detachably connectable to the extension connection terminal portion of the basic unit; and  
when the extension connection terminal portions of the basic and additional units  
30 are connected to each other, a connection state of the additional unit is detected,

information on an arbitrary key code transmitted from the additional unit is compared with the information on the respective equipment key codes stored in the memory section of the basic unit and then determined, and the equipment mode of the basic unit is automatically changed to the equipment mode corresponding to the arbitrary key code in accordance with the determination result.

7. The extensible type universal remote control as claimed in claim 2, wherein the additional unit includes:

a memory section in which information on a relevant equipment key code of the specific input selection button is stored; and

a remote-control control section for extracting the relevant equipment key code from the memory section according to the selected value of the specific input selection button and transmitting the extracted key code to the remote-control signal transmitting section of the basic unit.

8. The extensible type universal remote control as claimed in claim 2, wherein there are a plurality of additional units, and each of the additional units has an extension connection terminal receiving portion formed with data lines for receiving relevant key codes input from the other additional units, and the other additional units are consecutively connected in series or parallel to the additional unit connected to the basic unit.

9. The extensible type universal remote control as claimed in claim 1, wherein an upgrade terminal is provided on a side of the basic unit so that data downloaded through the upgrade terminal can be transmitted to a memory section of the basic unit, thereby upgrading information in the memory section of the basic unit.

10. The extensible type universal remote control as claimed in claim 4, wherein an upgrade terminal is provided on a side of the basic unit so that data downloaded through the upgrade terminal can be transmitted to the memory section of the basic unit, thereby upgrading the information on the key codes in the memory section of the basic unit.

11. The extensible type universal remote control as claimed in claim 2, wherein an upgrade terminal is provided on a side of the basic unit so that data downloaded through the upgrade terminal can be transmitted to a memory section of the basic unit and then to a memory section of the additional unit through data lines, thereby upgrading information in the memory sections of the respective units.
12. The extensible type universal remote control as claimed in claim 7, wherein an upgrade terminal is provided on a side of the basic unit so that data downloaded through the upgrade terminal can be transmitted to the memory section of the basic unit and then to the memory section of the additional unit through data lines, thereby upgrading the information on the key codes in the memory sections of the respective units.
13. The extensible type universal remote control as claimed in claim 9, wherein the upgrade terminal is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.
14. The extensible type universal remote control as claimed in claim 10, wherein the upgrade terminal is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.
15. The extensible type universal remote control as claimed in claim 11, wherein the upgrade terminal is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.
16. The extensible type universal remote control as claimed in claim 12, wherein the upgrade terminal is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.
17. The extensible type universal remote control as claimed in claim 9, wherein the

upgrade terminal is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

18. The extensible type universal remote control as claimed in claim 10, wherein the  
5 upgrade terminal is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

19. The extensible type universal remote control as claimed in claim 11, wherein the  
10 upgrade terminal is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

20. The extensible type universal remote control as claimed in claim 12, wherein the  
15 upgrade terminal is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

21. The extensible type universal remote control as claimed in claim 1, said basic unit further comprising an LCD window, for displaying status information, arranged at an upper portion of a front face thereof.

22. The extensible type universal remote control as claimed in claim 1, said common  
20 input selection buttons comprising a power button, a volume button, a channel button, direction buttons, or a selection button.

23. A method of operating an extensible type universal remote control comprising a  
25 basic unit and an additional unit, comprising the steps of:  
connecting the additional unit to the basic unit;  
selecting a specific input selection button disposed on the additional unit; and  
transmitting information on a relevant key code, which is generated according to a  
selected value of the selected specific input selection button, to a relevant piece of  
30 equipment through a remote-control signal transmitting section of the basic unit.

24. A method of operating an extensible type universal remote control comprising a basic unit and an additional unit, comprising the steps of:
- detecting if the additional unit is connected to the basic unit;
  - 5 transmitting an arbitrary key code from the additional unit to a comparison/determination section of the basic unit;
  - comparing information on the arbitrary key code transmitted from the additional unit with information on respective equipment key codes stored in a memory section of the basic unit and determining the arbitrary key code by the comparison/determination section;
  - 10 and
  - automatically changing an equipment mode of the basic unit to an equipment mode corresponding to the arbitrary key code in accordance with the determination result of the comparison/determination section.
25. A method of operating an extensible type universal remote control comprising a basic unit and an additional unit, comprising the steps of:
- connecting the additional unit to the basic unit and selecting a specific button among input selection buttons of the additional unit by a user;
  - transmitting a specific key code corresponding to the selected specific button to a
  - 20 comparison/determination section of the basic unit;
  - comparing information on the specific key code transmitted from the additional unit with information on respective equipment key codes stored in a memory section of the basic unit and determining the specific key code by the comparison/determination section;
  - and
  - 25 automatically changing an equipment mode of the basic unit to an equipment mode corresponding to the specific key code in accordance with the determination result of the comparison/determination section.
26. An extensible type universal remote control comprising:
- 30 a basic unit, said basic unit comprising:

a key input section comprising common input selection buttons used for controlling multiple pieces of electronic equipment;

remote-control signal transmitting means for transmitting a relevant equipment key code to a relevant piece of electronic equipment, said relevant key code generated  
 5 according to a selected value of one of said common input selection buttons or a selected value of a specific input selection button arranged outside of said basic unit; and

extension connection terminal means for receiving the relevant key code from said specific input selection button arranged outside of said basic unit.

- 10 27. The extensible type universal remote control as claimed in claim 26, further comprising an additional unit, said additional unit comprising:

a key input section comprising a plurality of said specific input selection buttons, which are exclusively used for controlling specific pieces of electronic equipment; and

- 15 extension connection terminal means for transmitting the relevant key code generated according to the selected value of said specific input selection button of said additional unit, to the basic unit;

wherein said extension connection terminal means is detachably connected to said extension connection terminal means of the basic unit.

- 20 28. The extensible type universal remote control as claimed in claim 27, wherein each of said extension connection terminal portion means of said basic and additional units comprise a data line.

- 25 29. The extensible type universal remote control as claimed in claim 27, wherein each of said extension connection terminal portion means of said basic and additional units comprise a data connector formed with the data lines and a power connector formed with power lines.

- 30 30. The extensible type universal remote control as claimed in claim 26, wherein the specific input selection button is provided on an additional unit, and said basic unit further

comprises:

memory means for storing information on the relevant equipment key codes of the input selection buttons of said basic and additional units,

remote-control control means for extracting the relevant equipment key code from said memory means according to the selected value of said input selection button selected from said key input section of said basic unit and transmitting the extracted key code to said remote-control signal transmitting means,

comparison/determination means for comparing the relevant equipment key codes stored in said memory means with the key code input from said additional unit and determining the relevant equipment key code, and

mode setting means for automatically changing an equipment mode of the basic unit to an equipment mode corresponding to said additional unit in accordance with the determination result of the comparison/determination means.

31. The extensible type universal remote control as claimed in claim 30, wherein said additional unit further comprises extension connection terminal means detachably connectable to said extension connection terminal means of the basic unit, and when a user connects said extension connection terminal means of said basic and additional units to each other and selects said specific input selection button of said additional unit, specific key code information corresponding to said selected specific input button is compared with the information on the relevant equipment key codes stored in the memory means of said basic unit, and the equipment mode of said basic unit is automatically changed to another equipment mode corresponding to the specific key code in accordance with the determination result.

32. The extensible type universal remote control as claimed in claim 30, wherein: said additional unit further comprises extension connection terminal means detachably connectable to said extension connection terminal means of the basic unit, and when said extension connection terminal means of said basic and additional units are connected to each other, a connection state of said additional unit is detected,



information on an arbitrary key code transmitted from the additional unit is compared with the information on the respective equipment key codes stored in the memory section of the basic unit and then determined, and the equipment mode of the basic unit is automatically changed to the equipment mode corresponding to the arbitrary key code in accordance with the determination result.

33. The extensible type universal remote control as claimed in claim 27, wherein said additional unit includes:

memory means for storing information on a relevant equipment key code of said specific input selection button; and

remote-control control means for extracting the relevant equipment key code from said memory means according to the selected value of said specific input selection button and transmitting the extracted key code to said remote-control signal transmitting means of said basic unit.

34. The extensible type universal remote control as claimed in claim 27, further comprising at least one further additional unit consecutively connected in series or parallel to said additional unit connected to said basic unit,

wherein each of said additional units has an extension connection terminal receiving means for receiving relevant key codes input from other additional units

35. The extensible type universal remote control as claimed in claim 34, wherein each of said extension connection terminal portion means of said basic, additional and further additional units comprise a data line.

36. The extensible type universal remote control as claimed in claim 26, said basic unit further comprising upgrade terminal means for downloading data to upgrade said basic unit.

37. The extensible type universal remote control as claimed in claim 29, said basic unit

further comprising upgrade terminal means for downloading data to said memory means of said basic unit, thereby upgrading the information on the key codes in the memory means of said basic unit.

5     38.     The extensible type universal remote control as claimed in claim 26, said basic unit further comprising upgrade terminal means for downloading data to upgrade said basic unit and said additional unit.

10     39.     The extensible type universal remote control as claimed in claim 33, said basic unit further comprising upgrade terminal means for downloading data to said memory means of said basic unit and said memory means of said additional unit, thereby upgrading the information on the key codes in the memory means of said basic unit and said additional unit.

15     40.     The extensible type universal remote control as claimed in claim 36, wherein said upgrade terminal means is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.

20     41.     The extensible type universal remote control as claimed in claim 37, wherein said upgrade terminal means is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.

25     42.     The extensible type universal remote control as claimed in claim 38, wherein said upgrade terminal means is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.

30     43.     The extensible type universal remote control as claimed in claim 39, wherein said upgrade terminal means is an external equipment connection terminal to be connected to external equipment so that the data can be downloaded therethrough.

44. The extensible type universal remote control as claimed in claim 36, wherein said upgrade terminal means is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

5 45. The extensible type universal remote control as claimed in claim 37, wherein said upgrade terminal means is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

10 46. The extensible type universal remote control as claimed in claim 38, wherein said upgrade terminal means is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

15 47. The extensible type universal remote control as claimed in claim 39, wherein said upgrade terminal means is a storage medium mounting terminal for allowing the data to be downloaded from a storage medium mounted thereon.

48. The extensible type universal remote control as claimed in claim 26, said basic unit further comprising an LCD window, for displaying status information, arranged at an upper portion of a front face thereof.

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49. The extensible type universal remote control as claimed in claim 26, said common input selection buttons comprising a power button, a volume button, a channel button, direction buttons, or a selection button.

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